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INTER-COMPANY CORRESPONDENCE

Post Office Box P
OAK RIDGE, TENN.

(INSERT NAME) COMPANY CARBIDE AND CARBON CHEMICALS CORP. LOCATION

KZ-

TO Mr. E. D. Flickinger
LOCATION Mr. L. L. Anthony, Jr.

DATE February 24, 1947

PLANT RECORDS DEPT.
CENTRAL FILES

B3240

ANSWERING LETTER DATE

ATTENTION

COPY TO Mr. G. T. E. Sheldon
Mr. D. R. Cyrus
Plant Records
FileSUBJECT Semi-Monthly Progress Report
K-1300 Area

REPORT NO.

KZ 5635

Gentlemen:

Following is a report covering conditions and production for the
K-1300 Area during the period from 2-1-47 to 2-16-47.

I. Building K-1301

A. Oxide Conversion Unit

1. Balance of Materials Used

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Date and category: 4/15/96
4/16/96

| | Class B Uranate Ash pounds* | Class B Oxide Ash grams* | Class A Cube Mat'l. grams* | Class M Oxide grams | Class D Oxide grams | Class C Oxide grams |
|---------------------|-----------------------------------|--------------------------------|----------------------------------|---------------------------|---------------------------|---------------------------|
| Inventory 1-31-47 | 265.5 | 2019 | 51 | 1116.0 | 446.0 | 0 |
| Received | 0 | 0 | 0 | 5502.4 | 5123.5 | 1255.4 |
| Shipped | 242.6 | 0 | 0 | 0 | 0 | 0 |
| On Hand 2-15-47 | 0 | 2019 | 51 | 6618.4 | 5569.5 | 1255.4 |
| Lost by Pulverizing | 0.3 | -- | -- | -- | -- | -- |

2. Production Balance

Carbide and Carbon Chemicals
Corporation, Operating Contractor for
the U.S. Atomic Energy Commission.

| | Class B Caustic liters* | Class M Caustic liters* | Class D Caustic liters* | Class B TF6 grams* |
|-------------------|-------------------------------|-------------------------------|-------------------------------|--------------------------|
| Inventory 1-31-47 | 416 | 583 | 596 | 24,444 |
| Produced | 549 | 0 | 0 | 12,604 |
| Shipped | 965 | 583 | 596 | 37,048 |
| On Hand 2-15-47 | 0 | 0 | 0 | 0 |

* Official weights not available at report time.

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This document has been approved for release
to the public by the
National Security Council
on 10/15/96
by [Signature]
Director, NSA

February 24, 1947

3. Operational Notes

The conversion unit temporarily ceased operations on February 12, due to the following factors:

1. Class A material cannot be fluorinated on an economically justifiable basis.
2. All four reactors must be run in series to obtain a minimum unit consumption of fluorine.

In view of these economic considerations, a stockpile of recovered material of sufficient size in classes B, C, D, or E was not available.

The insulation around each of the cold traps in the conversion room is being repaired.

A crossover has been made on the purge line to this unit which permits the use of dry air instead of nitrogen. This saves about 40 gallons of L-28 per day of operation.

4. Reaction Ratio

F₂ consumed: 196 pounds.
TF₆ produced: 12,604 grams (27.8 pounds)
Reaction ratio: 0.142 lbs. TF₆/lb. F₂.

B. F₂ Generation

1. Balance (pounds)

Inventory: 104 Produced: 366* Consumed: 380*
* 28 pounds vented not included.

2. Distribution (pounds)

| Oxide | 300 | | 1400 | 1300 | |
|------------|---------|-----|---------|---------|------|
| Conversion | Section | TEC | Section | Section | Labs |
| 196 | 91 | 12 | 73 | 0 | 8 |

3. Chemicals Usage (pounds)

| | Received | Charged | Consumed | Inventory |
|------------------|----------|---------|----------|-----------|
| HF | 0 | 0 | 467 | 4557 |
| KPF ₆ | 0 | - | 0 | 0 |
| NaF | 0 | - | 0 | 375 |
| LiF | 0 | - | 0 | 140 |
| KOH | 330 | - | 560 | 330 |
| Dry Ice | 6800 | - | 6300 | 500 |
| C-716 | 0 | - | 44 | 731 |

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4. Operational Notes

Thirty-nine items were filled under pressure as follows:

6 portable cylinders, 100 %
1 portable cylinder, 20 %
26 laboratory cylinders.
6 TEC acetelyne type cylinders.

Six laboratory cylinders were purged and evacuated.

The broken valves on five partially filled Harshaw HF cylinders were replaced with 3/4" Kerotest drum type valves.

The C-216 pump purge was changed from G-74 to dry air.

Pens on the Brown instrument chart were re-zeroed as follows:

| | | |
|------------------|-------|------------|
| Storage Tank # 3 | 0-10 | Green Ink |
| Storage Tank # 4 | 50-60 | Red Ink |
| Storage Tank # 5 | 20-30 | Purple Ink |

The chart scale is the same as before with one division equal to one psig.

The HF cylinders were removed from all four scales in number 2 position to permit the adjustment and necessary repairs of the scales.

One of the six acetelyne type cylinders filled for TEC was not shipped because the diaphragm of the valve ruptured during closing. The cylinder was vented to atmosphere and the damaged valve removed. This acetelyne type cylinder will not be filled in the future. Instead, TEC will be supplied with large portable cylinders similar to those used by Cascade Services.

5. Reaction Ratio

Produced: 366 lbs. F₂.
Consumed: 467 lbs. HF.
Ratio: 1.27 lbs. HF/lb. F₂.

II. Building K-1303

A. Decontamination Unit

1. "T" Increase

Total "T" increase for the period from 2-1-47 to 2-14-47 was 31.40 pounds.

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2. Shipments

Class A 160.0 pounds in 1983 liters.
Class W-11 6.5 pounds in 3080 liters.
Class D 1.76 pounds in 1567 liters.
Class E 2.6 pounds in 1586 liters.

3. Operational Notes

In addition to normal decontamination work, 55 converter spools were decontaminated. A total of 812 pieces of equipment were handled.

All acetylene type cylinders have been decontaminated.

B. Recovery Unit

1. Balance of Materials

| | Sample | Shipped | Received | In Process |
|---------------------------------------|--------|---------|----------|------------|
| T ₂ O ₈ Class M | 100 g. | 5504 g. | ---- | ---- |
| Solutions Class M | ---- | ---- | 4975 l. | None |
| Solutions Class D | ---- | ---- | 2880 l. | None |
| Filtrates Class B | ---- | 4254 l. | ---- | ---- |

2. Operational Notes

The building was cleaned up of Process Development's carbon drums. Empties were shipped out and full ones placed in cubicle number eight. Open top drums were secured for the purpose of holding soda ash and super-cel. The hallway was put in order concerning drums of solution, carboys, chemicals, etc.

C. Mercury Recovery Unit

1. Production Balance

Produced-----768 pounds of triple distilled mercury.
Received-----929 pounds of dirty mercury.
Shipped-----480 pounds of triple distilled mercury.
On hand ready to ship---288 pounds of triple distilled mercury.
On hand to be distilled--495 pounds. (Includes approximate weight in still pots.)

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2. Operational Note

The operator was given instructions to keep his equipment and floor absolutely free of mercury globules and to keep the covers down on the still reservoir pots as much as possible. This is being done.

D. Vacuum Pump Oil Recovery

Work order number D1OKZ 179737 has been placed for the extension of the vent duct for the vacuum pump oil recovery process since a considerable amount of trichlorethylene fumes are being given off by the process.

E. C-2144 Recovery Unit

During the first half of the month, approximately 50 gallons of C-2144, which were under specification, were re-run. No laboratory reports on this have arrived as of 2-14-47. Ten samples are in the laboratory.

The vent duct near the ceiling was repaired on 2-14-47. Condensate from the pan evaporators would flow down the sides of the duct and a part of this condensate would make its way between the crimped connection of the duct. It was possible for this water to spoil recovered oil in the filter press. This condition is now eliminated.

There were 415 pounds of Freon-113-oil mixture shipped out.

III. Building K-1408

A. Nitrogen Plant Operations

1. Balance of Material (gallons of L-28)

Inventory: 21,115 Received: 28,166 Consumed: 30,186

2. Distribution of Consumption (gallons of L-28)

| | As L-28 | As G-74 Pipeline | As G-74 Cylinders |
|--------------|---------|---------------------|----------------------|
| Process Area | 12,531 | 9,195 | --- |
| Cond. Bldg. | 833 | 3,425 | 364 |
| K-1300 Area | --- | 1,030 | 5 |
| Laboratories | 1,726 | --- | --- |
| T E C | --- | --- | 626 |
| Evaporation | 451 | --- | --- |

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3. Operational Notes

An emergency water line was installed to feed the final heat exchanger with sanitary water in event of an electrical failure. In this way the flow of water under pressure could substitute for the solution circulated by the electrically driven pump.

While unloading Linde tank car SERX 926, a safety valve opened flooding the car with liquid nitrogen which caused the car floor to buckle.

A two-day delay in repairing the warm converter manifold was experienced when all available welders were busy on a converter replacement job in Process Area.

Three full nitrogen cylinders were received from the J. A. Jones Construction Company.
Four Linde tank cars were unloaded.
Nitrogen cylinders filled - 408.

IV. General

The K-1300 Area consumed 30,000 KWH of electricity in this period.

Very truly yours,



H. M. Preuss
K-1300 Area Technical Supervisor

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